

Amendments to the Specification:

Please add the following summary after paragraph [0003]:

[0003.1] A method and apparatus for traffic scheduling is described. In one embodiment, a priority scheme is combined with a generalized processor sharing scheme to schedule transmission of a set of data and the set of data is transmitted as scheduled.

Please replace paragraph [0012] with the following:

[0012] Figure 2 is a diagram illustrating a packet scheduling mechanism according to one embodiment of the invention. In Figure 2, the set of queues 103 of Figure 1 store traffic. The set of queues 103 are configured into groups. Queues 211, 213, and 215 are configured as a first group 202. Queues 217, 219, ~~A21~~ 221, and ~~A23~~ 223 are configured as a second group 204. The queue ~~A25~~ 225 is configured as a third group 206. A queue scheduler 205 determines which queue in the first group of queues 202 will transmit traffic at a given time. A queue scheduler 207 determines which queue in the second group of queues 204 will transmit traffic. A queue scheduler 209 determines which queue in the third group of queues 206 will transmit traffic. A priority group scheduler 203 determines which of the group of queues 202, 204, or 206 will transmit traffic. A link scheduler 201 determines when a link associated with the set of queues 103 can transmit.

Please replace paragraph [0013] with the following:

[0013] Figure 3 is a flow chart for maintaining eligibility indicators according to one embodiment of the invention. In Figure 3 at block 301, [[a]] it is determined if a

clock tick occurs. If a clock tick does not occur, then control loops back to block 301. If a clock tick occurs, then at block 302 a counter is incremented. At block 303, it is determined if the counter is equal to a link period. The link period can be adjusted in relation to the clock signals of a system. If the counter is not equal to or greater than the link period, then control flows back to block ~~304~~ 301. If it is determined at block 303 that the counter is equal to or greater than the link period, then at block 305 a link balance is updated with a minimum of: 1) the link balance maximum; and 2) the link balance incremented with the link token. At block 307, a priority group "clock" is updated with a priority group token. At block 309, the counter is reset. Control flows back to block 301 from block 309.

Please replace paragraph [0015] with the following:

[0015] Figure 5 is a flowchart for a priority group scheduler according to one embodiment of the invention. At block 501, a highest priority group is selected. At block 503, it is determined if the selected priority group has data to transmit. If the selected group does not have data to transmit, then at block 504 the scheduler determines if the selected priority group is the last priority group. If the selected priority group is not the last priority group, then the scheduler selects the next highest priority group at block 505. Control flows from block 505 to block 503. If the selected priority group has data to transmit, then at block 507 it is determined if the selected priority group is eligible to transmit. Eligibility can be determined in a number of ways as described above. In one embodiment of the invention, an eligibility value (initialized to zero) is compared with the priority group balance. If the eligibility value is less than the priority group balance, then the priority group is eligible to transmit data. If the selected priority group is eligible

to transmit data, then at block 519 the data is transmitted from the selected priority group.

At block ~~D21~~ 521, the eligibility value for the transmitting priority group is updated.

From block ~~D21~~ 521, control flows to block 517 where the scheduler exits.

Please replace paragraph [0016] with the following:

[0016] If the scheduler determines at block 507 that the selected priority group is not eligible, then at block 509 the scheduler determines if there is an ineligible higher priority group with data to transmit. If there is not an ineligible higher priority group with data, then at block 511 the selected priority group becomes a backup transmitting group. From block 511, control flows to block 504. If the scheduler determines at block 509 that there is an ineligible higher priority group with data to transmit, then control flows to block 504. If the scheduler determines at block 504 that the selected priority group is the last priority group, then at block 513 the scheduler determines if there is a valid backup group. If the scheduler determines that there is not a valid backup group, then at block 517 the scheduler exits. If the scheduler determines at block 513 that there is a valid backup group, then at block 515 the backup group transmits its data. In another embodiment of the invention, ineligible priority groups are restricted from transmitting. Control flows from block 515 to block ~~D21~~ 521. In one embodiment of the invention, if an ineligible priority group transmits data, then the priority group balance is updated with the cost of the transmission.